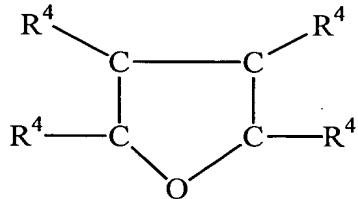


CLAIMS

What is claimed is:

1. A urea/urethane polymer comprising (a) repeating units derived from a hydroxy-terminated copolymer prepared from tetrahydrofuran and one or both of an alkylene oxide and a cyclic acetal, and (b) repeating units derived from a polyisocyanate;
 wherein the urea/urethane polymer contains less than about 2 mole percent of urea units described by the formula $-R - N(R^2) - C(O) - N(R^2) - R^1 -$;
 wherein R is an aromatic hydrocarbon radical, R¹ is an aliphatic hydrocarbon radical, and R² is H or an amide group that is described by the formula $-C(O) - N(R^2) - R -$; and
 wherein the tetrahydrofuran is described by the formula

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- 25 in which any one of the R⁴'s may be a C₁ to C₄ alkyl radical with the remaining R⁴'s being hydrogen.
2. A urea/urethane polymer according to Claim 1 wherein the polyisocyanate is selected from the group consisting of toluene diisocyanate, methylene diphenyldiisocyanate and polymethylene polyphenylisocyanate.
- 30 3. A urea/urethane polymer according to Claim 1 wherein the alkylene oxide is selected from the group consisting of 1,2-propylene oxide and ethylene oxide.
- 35 4. A urea/urethane polymer according to Claim 1 wherein the alkylene oxide is ethylene oxide.

5. A urea/urethane polymer according to
Claim 1 wherein each R⁴ in the tetrahydrofuran is
hydrogen.

6. A urea/urethane polymer according to
5 Claim 1 wherein each R⁴ in the tetrahydrofuran is
hydrogen, the hydroxy-terminated copolymer is prepared
from an alkylene oxide, and the alkylene oxide is
ethylene oxide.

7. A urea/urethane polymer according to
10 Claim 1 wherein the urea/urethane polymer contains less
than about 1 mole percent of the described urea units.

8. A urea/urethane polymer according to
Claim 1 wherein the urethane polymer further comprises
repeating units derived from an ionic compound or a
15 potentially ionic compound.

9. An aqueous dispersion of a urea/urethane
polymer wherein the urea/urethane polymer comprises a
polymer according to Claim 1 and a surfactant.

10. An ionomeric urea/urethane polymer
20 comprising (a) repeating units derived from an
aliphatic polyether polyol having a molecular weight of
about 700 to about 1500, and (b) repeating units
derived from a polyisocyanate,

wherein the urea/urethane polymer contains
25 less than about 2 mole percent of urea units described
by the formula -R - N(R²) - C(O) - N(R²) -R¹ -;

wherein R is an aromatic C₆ - C₂₀ hydrocarbon
radical, R¹ is an aliphatic C₁ - C₂₀ hydrocarbon
radical, and R² is H or an amide group that is
30 described by the formula - C(O) - N(R²) - R -.

11. A urea/urethane polymer according to
Claim 10 which comprises repeating units derived from
an ionic compound or a potentially ionic compound.

12. A urea/urethane polymer according to
35 Claim 11 wherein the ionic compound or potentially
ionic compound comprises a hydroxy-carboxylic acid of
the general formula (HO)_xR⁷(COOH)_y, wherein R⁷
represents a straight or branched hydrocarbon radical

containing 1 to 12 carbon atoms; and x and y each independently represents values from 1 to 3.

13. A urea/urethane polymer according to
Claim 11 wherein the ionic compound or potentially
5 ionic compound comprises 2,2' dimethanolpropionic acid.

14. A urea/urethane polymer according to
Claim 10 wherein the polyisocyanate is selected from
the group consisting of toluene diisocyanate, methylene
diphenyldiisocyanate and polymethylene
10 polyphenylisocyanate.

15. A urea/urethane polymer according to
Claim 10 wherein the polyether polyol is described by
the formula HO - [(CR⁵H)_m - O -]_n -H, wherein R⁵ is
hydrogen, a halogen or a C₁ to C₄ alkyl radical; m is
15 3 or 4; and n is in the range of about 8 to about 20.

16. A urea/urethane polymer according to
Claim 15 wherein R⁵ is hydrogen.

17. A urea/urethane polymer according to
Claim 10 wherein the polyether polyol has a molecular
20 weight in the range of about 900 to about 1150.

18. A urea/urethane polymer according to
Claim 10 wherein the urea/urethane polymer contains
less than about 1 mole percent of the described urea
units.

25 19. An aqueous dispersion of a urea/urethane
polymer wherein the urea/urethane polymer comprises a
polymer according to Claim 10 and a surfactant.